Abstracts

Performance analysis of smart antenna test-bed operating in a wide-band CDMA channel

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In this paper, we present a performance analysis of a smart antenna system operating in a wide-band CDMA wireless-local-loop channel using a beam-forming module (BFM) that has been implemented on a digital signal processor (TMS320C6701) board. We first show the results of computer simulations obtained from the modeled received (RX) signals through a test-bed system consisting solely of baseband signal processing parts, i.e., modeled RX data-generating PC, BFM for computing the optimal weight vector and interfacing module. A test-bed system of the entire base station is then implemented to evaluate the adaptive beam-forming function with the actual wireless signals. This test-bed system includes several subscribers, as well as the array antenna, RF modules, and other receiving parts required at the cell site.

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